UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
D AGOSTA, STEPHEN M

ART UNIT	PAPER NUMBER
2683	2

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5,10-14 and 17-22* is/are rejected.

7)☒ Claim(s) *2-4,6-8,15 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

The application's claim for benefit to 60/238,305 dated 4-25-01 is granted.

Claim Objections

<u>Claim 1</u> objected to because of the following informalities: What does the term

"in the event of a mobile terminal" mean? The English, in the examiner's opinion, does

not appear to flow correctly, eg. the term "event" means that something is to happen,

yet there is no prior reference to "what this something is" and when/why it happens (let

alone that the "event" is a mobile terminal)?. Appropriate correction is required.

For purposes of the examination, the examiner interprets this to mean that the

architecture supports mobile terminal communications.

Failure to correct will lead to a USC 112 rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

<u>Claims 1, 5, 10-14 and 17-22</u> rejected under 35 U.S.C. 103(a) as being

unpatentable over Kovacs et al. US 2001/0003191 and further in view of Basilier et al.

US 6,728,536 (hereafter Kovacs and Bailier).

As per **claim 1**, Kovacs teaches an architecture supporting a plurality of different

multimedia communications protocols and applications (title, abstract);

Each application having at least one multimedia application functional entity
(MAFE) [page 1, #0002 teaches a multimedia application being a set of software units
that communicate via a network which inherently requires a protocol – hence the
applicant's disclosure that a MAFE is a protocol, spec. page 3, paragraph #7, reads on
each multimedia application having it's own protocol unless it is written to interoperate
via a standardized protocol such as TCP/IP],

A mobility management functional entity (MMFE) including one of a AuF, HLR
and VLR for mobility management and between two of said mobility management
functional entities supporting mobile terminal communications (eg. in the event of a
mobile terminal) [figure 1 shows a cellular system components, ie. phone #9, Tower #14
and BTS #15 and one skilled knows that a cellular system inherently includes MMFE
functions such as an MSC, HLR, VLR and AuF – note that the applicant discloses
MMFE's as being an HLR, VLR or AuF, spec. page 4, paragraph 07, top of page).

But is silent on

A common mobility management protocol shared by said different multimedia
applications for messaging between a given MAFE.

The examiner notes that several designs are available that allow disparate
systems (eg. hardware or software) to interoperate. The concept of "tunneling" is well
known and allows a first protocol to be encapsulated into a second protocol thereby
allowing the first protocol to use the other (usually more common) protocol for
transmission. An example is tunneling Novell IPX/SPX data through a TCP/IP network.
A second design uses a "conversion" design whereby a black box converts/translates a
first protocol to a second protocol. Routers are well known and perform this operation.
Kulkarni, not cited, discloses HLR, VLR and AC's/AuC's whereby an inter-technology
roaming proxy (figure 4, GIP) translates between GSM and IS-41 protocols.

Basilier teaches routing data between home and visiting networks (eg. HLR and
VLR, etc.) that uses a common/tunneled protocol such as TCP/IP, AAA protocol
(abstract, figures 1-3 and claims 1-15).

It would have been obvious to one of ordinary skill in the art at the time of
applicant's invention to modify Kovacs, such that a common mobility management

protocol shared by said different multimedia applications for messaging between a given MAFE is used, to provide means for connecting multiple users/networks via one common protocol to reduce complexity and allow users to readily connect.

As per **claim 5**, Kovacs in view of Basilier teaches claim 1 **but is silent on** wherein a message comprises common fields and message-specific data.

Basilier teaches a data format (figure 3) whereby the IP, UDP/TCP and AAA Headers contain common fields – since these headers are from known industry standards – and any payload data would contain "message-specific" data.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kovacs in view of Basilier, such that a message comprises common fields and message-specific data, to provide means for encapsulating message-specific data into a common protocol.

As per **claim 10**, Kovacs in view of Basilier teaches claim 1 supported in a centralized architecture (figure 1 shows a centralized cellular system) **but is silent on** a distributed architecture of MMFE's.

Basilier teaches a distributed architecture whereby all network components are connected via a public TCP/IP network (ie. common protocol and transmission links) [see figure 1].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kovacs in view of Basilier, such that a distributed architecture of MMFE's is supported, to provide means for the design to be implemented in both centralized and distributed systems to support an engineer's need for design flexibility.

As per **claim 11**, Kovacs teaches a method of messaging between MAFE's and MMFE's (abstract and figure 1 shows mobile multimedia messaging) **but is silent on** and between (any/all) MMFE's comprising the steps of:

Receiving a descriptor request message at a descriptor owning functional entity,

Matching said descriptor request message with a plurality of templates and transmitting a descriptor confirmation message with all matching templates.

The examiner notes that several designs are available that allow disparate systems (eg. hardware or software) to interoperate. The concept of "tunneling" is well known as is the concept of using routers (Kulkarni, not cited, discloses HLR, VLR and AC's/AuC's whereby an inter-technology roaming proxy (figure 4, GIP) translates between GSM and IS-41 protocols).

Basilier teaches routing data between home and visiting networks (eg. HLR and VLR, etc.) that uses a common/tunneled protocol such as TCP/IP, AAA protocol (abstract, figures 1-3 and claims 1-15). Basilier's disclosure of a common protocol(s) being used to interconnect network components would require a signal/message to the network to alert it that it needs to convert/match the data stream to a common protocol/template. Basilier's common format (figure 3) inherently requires the network to identify data that is to be encapsulated in this format/template. Hence, Basilier discloses "a descriptor request" and "matching said descriptor request message with at least one template/protocol and transmitting a descriptor confirmation message with a matching template(s).'

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kovacs in view of Basilier, such that it receives a descriptor request message and matches it to a plurality of templates and transmits a confirmation with all matching templates, to provide means for the user/system to request which protocols area available and to select from any that are returned (eg. use a common protocol).

As per **claim 12,** Kovacs in view of Basilier teaches claim 11 **but is silent on** each template has an associated lifetime.

Basilier teach use of TCP/IP and an IP-header (figure 3). The TCP/IP uses a Time To Live counter that reads on an associated lifetime (eg. for packet or template).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kovacs in view of Basilier, such that each template has an associated lifetime, to provide means for limiting the existence of data/protocols/templates used.

As per **claim 13**, Kovacs teaches claim 11 **but is silent on** wherein a template comprises a range of addresses indicated by the presence of a Boolean flag.

Basilier teaches use of TCP/IP that inherently use TCP/IP addresses which are represented in binary format. A flag is well known and is used to typically indicate an "ON/OFF" or "YES/NO" condition upon which appropriate action is taken.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kovacs in view of Basilier, such that a template comprises a range of addresses indicated by the presence of a Boolean flag, to provide means for using an address from a range of addresses supplied from the network for using the common protocol.

As per **claim 14**, Kovacs in view of Basilier teaches claim 11 operable in a centralized architecture (figure 1 shows a centralized cellular system) **but is silent on** a distributed architecture of MMFE's.

Basilier teaches a distributed architecture whereby all network components are connected via a public TCP/IP network (ie. common protocol and transmission links) [see figure 1].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kovacs in view of Basilier, such that a distributed architecture of MMFE's is supported, to provide means for the design to be implemented in both centralized and distributed systems to support an engineer's need for design flexibility.

As per **claim 17**, Kovacs teaches a method of messaging between MAFE's and MMFE's (abstract and figure 1) **but is silent on** and between (any/all) MMFE's comprising the steps of:

Receiving a validation request message at an authentication granting MMFE from a MAFE in sequence via a VLR and a HLR, and

Transmitting a validation confirmation message in reverse sequence from said Authentication granting MMFE to said MAFE.

Basilier teaches communications using a common protocol between network components/MMFE's and registration/authentication (figure 2, see #3 at bottom) which inherently requires the user to "log-on" to the network and register via messaging (eg. REGNOT message) to an HLR/Authentication Center (C3, L46-50). One skilled realizes that the mobile sends a message from itself to the HLR/AuC whereby the HLR/AuC then informs any/all other network components that the mobile is validated and then a message is sent to the mobile informing that it has been validated. Hence this process reads on "Transmitting a validation confirmation message in reverse sequence from said Authentication granting MMFE to said MAFE".

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kovacs in view of Basilier, such that a validation request is received at granting MMFE via VLR/HLR and validation request is sent in reverse order, to provide means for methodically verifying the user's authenticity and confirming it with network components before allowing the user access to the network.

As per **claim 18**, Kovacs teaches claim 17 for a mobile terminal location update, the mobile terminal moving within a single logical boundary of a MAFE (Abstract and figure 1). The examiner notes that Kovacs' disclosure of a cellular network inherently teaches a system with logical boundaries/cells whereby roaming from cell to cell requires handoff of the application.

As per **claim 19**, Kovacs teaches claim 17 for a mobile terminal location update, the mobile terminal moving outside a logical boundary of a MAFE to within the logical boundary of another MAFE (Abstract and figure 1). The examiner notes that Kovacs' disclosure of a cellular network inherently teaches a system with logical boundaries/cells whereby roaming from cell to cell requires handoff of the application.

As per **claim 20**, Kovacs teaches claim 19 and a cellular system (figure 1) **but is silent on** further comprising the step of a HLR MMFE communicating with a previously visited VLR MMFE for descriptor update upon receipt of a validation confirmation message from said Authentication granting MMFE.

Basilier teaches a HLR/AuC function (C3, L46-50) and VLR function (C3, L65 to C4, L2) which interact as the mobile roams in/out to other visited networks and reads on the "HLR MMFE communicating with a previously visited VLR MMFE for descriptor update upon receipt of a validation confirmation message from said Authentication granting MMFE".

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kovacs in view of Basilier, such that a HLR MMFE communicating with a previously visited VLR MMFE for descriptor update upon receipt of a validation confirmation message from said Authentication granting MMFE, to provide means for methodically verifying the user's authenticity and confirming it with network components before allowing the user access to the network.

As per **claim 21**, Kovacs teaches a method of messaging between MAFE's and MMFE's (abstract and figure 1) **but is silent on** and between (any/all) MMFE's comprises the steps of:

Receiving an access request message at a HLR MMRE from a MAFE in sequence via a VLR MMFE; and

Transmitting an access confirmation message in reverse sequence from said HLR MMFE to said MAFE responsive to a request for access initiated by a mobile terminal endpoint,

The mobile terminal endpoint having moved within the logical boundary of said MAFE.

Basilier teaches communications using a common protocol between network components/MMFE's and registration/authentication (figure 2, see #3 at bottom) which inherently requires the user to "log-on" to the network and register via messaging (eg. REGNOT message) to an HLR/Authentication Center (C3, L46-50). One skilled

realizes that the mobile sends a message from itself to the HLR/AuC whereby the HLR/AuC then informs any/all other network components that the mobile is validated and then a message is sent to the mobile informing that it has been validated. Hence this process reads on "Transmitting an access confirmation message in reverse sequence from said HLR MMFE to said MAFE responsive to a request for access initiated by a mobile terminal endpoint".

Basilier teaches a HLR/AuC function (C3, L46-50) and VLR function (C3, L65 to C4, L2) which interact as the mobile roams in/out to other visited networks and reads on the "Receiving an access request message at a HLR MMRE from a MAFE in sequence via a VLR MMFE and The mobile terminal endpoint having moved within the logical boundary of said MAFE".

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kovacs in view of Basilier, such that a access request is received at HLR via VLR and access is granted in reverse order, to provide means for methodically verifying the user's authenticity and confirming it with network components before allowing the user access to the network as the user roams inside/outside the cellular network.

As per **claim 22**, Kovacs teaches a method of messaging between MAFE's and MMFE's (abstract and figure 1) **but is silent on** and between (any/all) MMFE's comprises the steps of:

Receiving an access request message at a HLR MMRE from a MAFE in sequence via a VLR MMFE; and

Transmitting an access confirmation message in reverse sequence from said HLR MMFE to said MAFE responsive to a request for access initiated by a mobile terminal endpoint,

The HLR MAFE forwarding access request to a previously visited VLR MAFE;

The mobile terminal endpoint having moved outside the logical boundary of a previously visited MAFE.

Basilier teaches communications using a common protocol between network components/MMFE's and registration/authentication (figure 2, see #3 at bottom) which inherently requires the user to "log-on" to the network and register via messaging (eg. REGNOT message) to an HLR/Authentication Center (C3, L46-50). One skilled realizes that the mobile sends a message from itself to the HLR/AuC whereby the HLR/AuC then informs any/all other network components that the mobile is validated and then a message is sent to the mobile informing that it has been validated. Hence this process reads on "Transmitting an access confirmation message in reverse sequence from said HLR MMFE to said MAFE responsive to a request for access initiated by a mobile terminal endpoint".

Basilier teaches a HLR/AuC function (C3, L46-50) and VLR function (C3, L65 to C4, L2) which interact as the mobile roams in/out to other visited networks and reads on the "Receiving an access request message at a HLR MMRE from a MAFE in sequence via a VLR MMFE and The HLR MAFE further forwarding the access request to a previously visited VLR MAFE and The mobile terminal endpoint having moved outside the logical boundary of a previously visited MAFE".

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kovacs in view of Basilier, such that a access request is received at HLR via VLR and access is granted in reverse order and HLR forward access request to VLR, to provide means for methodically verifying the user's authenticity and confirming it with network components before allowing the user access to the network as the user roams inside/outside the cellular network.

Allowable Subject Matter

Claims 2-4, 6-8 and 15-16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

These claims, in the examiner's opinion, recite highly specific designs which are not disclosed in the prior art cited.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1. Kulkarni et al. US 5,862,481.

2. Lewin et al. US 6,587,476

3. Amin et al. US 6,714,987.

4. Elliott et al. US 6,690,654

5. Hjalmtysson et al. US 6,400,816

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen D'Agosta